S/103/62/023/002/007/015
D230/D301

13,2000

AUTHORS: Charkviani, O.A., and Chichinadze, V.K. (Tbilisi)

TITLE: On the mechanical synthesis of compensating devices by means of self-adjusting system

PERIODICAL: Avtomatika i telemekhanika, v. 23, no. 2, 1962, 176 - 185

TEXT: The method of construction and the parameters of the individual elements of the automatic control system are discussed. The synthesis is performed by means of an electronic simulator of a self-adjusting system designed by the Institut elektroniki, avtomatiki i telemekhaniki Akademii nauk Gruzinskoy SSR (Institute of Electronics, Automation and Telemechanics of the Academy of Sciences, Georgian SSR). With this model it is possible to synthesize various devices of automatic control for regulating linear and non-linear sections. As a result of the synthesis the structure thus obtained corresponds to a linear system and the order of the differential equation defining the processes in the structure cannot be greater than the fourth. The search time for finding the unknown varies

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On the mechanical synthesis of ...

from a few minutes to a few hours. Search-time saving is effected by performing the object simulation in reduced time scale. A limiting case of automatic synthesis of non-linear systems is considered in particular, the synthesis of linear compensating sections designed to compensate various non-linear devices. As an example of the method, various topics of automatic pilot simulation are considered. In the equations defining the pitching motion of the plane, certain non-linearities are taken into account. There are 6 figures and 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc

SUBMITTED: June 9, 1961

Card 2/2

CHICHINADZE, V. K.; CHARKVIANI, O. A.

"On application of self-adjusting Systems to Automation of Processes Involved in the Design of Automatic Control Systems."

Paper to be presented at the IFAC Congress held in Basel, Switzerland, 27 Aug to 4 Sep 63

MURUSIDZE, G.Ya., CHICHINADZE, V.K.

Use of supercritical reflections in computing the mean velocities. Trudy Inst. geofiz. AN Gruz.SSR 22:43-55 '54. (MIRA 10:12)

L 55003-65 EWT(d)/EPF(n)-2/EWP(v)/EWP(k)/EWP(h)/EWA(l) Po-4/Pq-4/Pf-4/Pg-4/
Pae-2/Pu-4/Pk-4/Pl-4 IJP(c) WW/GS/BC
ACCESSION NR: AT5008642 S/0000/64/000/000/0164/0177

AUTHOR: Chichinadze, V. K.; Charkviani, O. A. 14

TITLE: Using adaptive systems for automating the design of automatic control systems

SOURCE: International Federation of Automatic Control. International Congress. 2d, Rome, 1963. Samonastraivayushchiyesya avtomaticheskiye sistemy (Self-adaptive automatic control systems); trudy simpoziuma. Moscow, Izd-vo Nauka, 1964, 164-177

TOPIC TAGS: adaptive control system, automatic control design, mathematical model

ABSTRACT: Examples of the automated synthesis of control apparatus to be used with both linear and nonlinear systems are considered in this article. The synthesis is accomplished by means of an adaptive system, which carries out a search procedure according to the law of random numbers. The results mentioned in this work were obtained by the mechanical synthesis of a rather complicated automatic control system. The method of synthesis described here may be applied directly to the object or to a model of the object in an analog computer simulation. The search times of various systems vary from a few minutes to a few hours. Thus it may be necessary

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ACCESSION NR: AT5008642

to use a time scaled model in order to shorten the search time. The synthesis of a system is conventionally divided into two stages. The first stage includes the determination of the structure of the system and of the parameters of the control apparatus. The second stage consists of the construction or generation of a block diagram consisting of physically realizable elements. The present work examines the first question, i.e., the question of the mechanical synthesis of the system, and this is carried out with the aid of an electronic model of an adaptive system developed at the Institute of Electronics, Automation, and Telemechanics in the Georgian SSR. The structure obtained as a result of the mechanical synthesis corresponds to a linear system, and the order of the differential equation describing the process in the above mentioned structure may not be greater than 4th order. Orig. art. has: 6 figures, 25 formulas.

ASSOCIATION: none

SUBMITTED: 26Nov64 ENCL: 00 SUB CODE: DP, IE

NO REF SOV: 005 OTHER: 001

Card 2/2

CHICHINADZE, V.K., Grad Tech Sci—(diss) "Study of the system of ~~heat emission~~ fuel feed of high-speed diesel engines with ~~throttling~~ control of fly suction." Mos, 1958. 17 pp with drawings (Min of Higher Education USSR. Mos ~~Automobile~~ Highways Inst), 120 copies (KL,45-58,140)

not the U.K in cybernetics

-110-

CHICHINADZE, V.

Automotive transportation unit and the problems of aesthetics.
Avt. transp. 43 no.4:11 Ap '65. (MIRA 18:5)

1. Glavnyy inzhener Tbilisskoy avtotransportnoy kontory No.5.

EWT(1) GW

ACC NR: AP6007652 SOURCE CODE: UR/0213/66/006/001/0098/0108

AUTHOR: Neprochnov, Yu. P.; Neprochnova, A. F.; Lunarskiy, G. N.; Mikhno, M. F.; Murashidze, G. Ya.; Chichinadze, V. K.

ORG: Institute of Oceanology, AN SSSR (Institut okeanologii AN SSSR); Institute of Geophysics AN GruzSSR (Institut geofiziki AN GruzSSR)

TITLE: Structure of the earth's crust in the eastern region of the Black Sea on the basis of seismic depth soundings

SOURCE: Okeanologiya v.6, no. 1, 1966, 98-108

TOPIC TAGS: earth crust, seismology, hodograph

ABSTRACT: The work was performed using sea and shore recording stations. The Institute of Oceanology's ships "Akademik Vavilov" and "Akademik Obruchev" were used as sea recording stations. The recording devices on both ships included hydrophones with preliminary amplifiers and seismic depth sounding stations designed by the Institute of Physics of the Earth (Institut fiziki zemli), each consisting of two low-frequency amplifiers, two medium-frequency amplifiers, and one sonic amplifier. The hydrophones were submerged to a depth of 80 m. The shore stations were located in Sukhumi and Zugdidi. Explosions of trotyl charges weighing 130 kg were used as a source for seismic waves. Using four recorded wave groups, three sections of the earth's crust were ex-

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UDC: 550.311

L 33343-66

ACC NR: AP6007652

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plored. The study of seismograms and hodographs disclosed that the three sections crossed heterogeneous zones of complex geological formations. However, positively plot-refracted boundary lines were not sufficiently accurate, although some conclusions about the depth structure of the sections could be made. The cross-section of the earth crust explored consists of sedimentary and "basaltic" beds. Eastward lies a "granitic" bed. The most important characteristic of this region's earth structure is the big upheaval of the "granitic" bed, buried under a 4-km mass of sedimentation. It could be considered as a remainder of the trans-Caucasian geoanticline. Another upheaval of smaller size is located in the vicinity of the Gudaut shole. In addition to the authors, G. N. Shchepletsov, G. S. Strizhenok, M. A. Zaychchkovskiy, N. I. Kichin, and others participated in the expedition. The material was processed by A. F. Neprochnova and Yu. P. Neprochnov; the seismogram processing was done at the Zugdidi sea station by G. Ya. Murusidze and V. K. Chichinadze. Orig. art. has: 5 fig. [19]

SUB CODE: 08/ SUBM DATE: 11Nov64/ ORIG REF: 005

Card 2/2

PEROV, V.; BATUGINA, I., marksheyder (g.Kiselevsk); CHICHINDAYEV, D.

Response to "Master ugl'ia" articles. Mast.ugl. 9 no.5:22 My '60.
(MIRA 13:7)

1. Zaveduyushchiy otdelom massovoy raboty Dvortsa kul'tury shakhterov, g.Belidovo (for Perov). 2. Shakhta No.12, Kemerovskoy oblasti (for Chichindayev).

(Working men's clubs)

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9.9865

S/169/62/000/012/022/095
D228/D307

AUTHOR: Chichinin, I.S.

TITLE: Theory of devices for the combination grouping of seismic detectors

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 12, 1962, 33, abstract 12A277 (Geologiya i geofizika, no. 12, 1961, 100-112)

TEXT: The author considers the theory of a device for the multi-channel combined grouping of seismic detectors, with a preset function of sensitivity variation of individual units. It is shown that the prescribed condition can be exactly fulfilled only if the internal source resistances are zero. Actually, however, this condition is realizable only within certain limits and the maximum value of the deviations can be made as small as desired by a selection of resistances contained in the grouping circuit. The difference between the operating conditions of the terminal and middle groups can also be made as small as desired by including special

Card 1/2

Theory of devices ...

resistances in the former. The author derives general relations, which allow the distribution of the group unit sensitivities to be ascertained. Formulas are given for calculating the electric parameters of the summing circuit according to the required form of the sensitivity envelope of individual units of the group, the sensitivity of the recording channel, and the preset permissible deviation of the actual circuit output voltages from the calculated voltages (due to finite resistances of the sources). 9 references.
[Abstracter's note: Complete translation]

Card 2/2

CHICHININ, I.S.; FYN DE-I [Fêng Tê-i]

Distortion of hodographs of reflected waves in grouping. Vop. din. teor. raspr. seism. voln no.4:194-204 '62. (MIRA 15:10)
(Seismometry)

RUDAKOV, A.G.; CHICHININ, I.S.

Experimental studies of groups of receivers and sources based on the frequency theory of grouping. Vop. din. teor. raspr. seism. voln no.4:205-219 '62. (MIRA 15:10)
(Seismometry)

RUDAKOV, A.G.; KHARITONOV, A.I.; CHICHININ, I.S.

Practice of using the frequency theory of grouping in the Uzbek Geophysical Trust. Vop. din. teor. raspr. seism. voln no.4:220-230 '62. (MIRA 15:10)

(Uzbekistan—Seismometry)

S/169/63/000/003/041/042
D263/D307

AUTHORS: Chichinin, I.S. and Fyn, De-I.

TITLE: On the problem of distortions of hodographs of reflected waves during grouping

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 3, 1963, 15, abstract 3D88 (In collection: Vopr. dinamich. teorii rasprostr. seysmich. voln. 4. L., Leningr. un-t, 1962, 194-204)

TEXT: The authors studied the distortions of reflected wave signals in longitudinal grouping for two type of the distribution of the sensitivity of seismic receivers - rectangular and triangular. Calculations of signals at the output of groups were carried out for the input signal in the shape of a sinusoid filling the bell impulse. Formulas were obtained allowing an estimation of the maximum permissible base of grouping, for which the distortions introduced during the arrivals of the main phases of the signal do not exceed a certain value. Nomographic methods are shown for the

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On the problem ...

S/169/63/000/003/041/042
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estimation of possible distortions when the initial form of the signal is known.
[Abstracter's note: Complete translation]

Card 2/2

CHICHININ, I. S.

Dissertation defended for the degree of Candidate of Technical Sciences at the Joint Scientific Council on Physicomathematical and Technical Sciences; Siberian Branch

"Theory and Methods of Combination Grouping and Their Application to Seismic Prospecting Studies Using the Method of Reflected Waves."

Vestnik Akad. Nauk, No. 4, 1963, pp 119-145

CHICHININ, I.S.

Asynchronous accumulation of seismic signals. Geol. i geofiz. no.11:94-110 '64. (MIRA 18:4)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

L 4530-66 EWT(1)

ACC NR: AP5026973 SOURCE CODE: UR/0210/65/000/009/0101/0109

AUTHOR: Potap'yev, S. V.; Chichinin, I. S. 44,55 44 55 28

ORG: Institute of Geology and Geophysics, Siberian Branch, AN SSSR, Novosibirsk (Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR)

TITLE: A method of exciting seismic waves by air bombing in regional investigations in almost inaccessible regions of Siberia

SOURCE: Geologiya i geofizika, no. 9, 1965, 101-109

TOPIC TAGS: geophysical prospecting, aerial seismic survey, air bombing, reflected seismic wave 13,44,55

ABSTRACT: A new method proposed for geophysical prospecting in almost inaccessible regions in Siberia involves the use of air-dropped bombs to excite seismic waves. The advantages claimed for this method are complete elimination of drilling, handling of explosives under field conditions, and the necessity for setting off many shots over large areas in a relatively short time. First-priority objectives are the oil-bearing regions of Western Siberia where the soft ground hampers drilling operations but favors penetration by bombs. Empirical formulas are derived for calculating the penetration of bombs into such homogeneous and nonhomogeneous soils as clay, sand, peat, and associated permafrost layers. It was found that bombs air-dropped from a height of 1 km penetrated more than 7 m, and generally penetrated loosely consolidated for-

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ACC NR: AP5026973

mations where explosives would have little seismic effect; when necessary, greater penetration could be achieved by dropping bombs from greater heights. It was also found that in this area, the minimum distance between shot holes and instruments should be at least 10 to 15 km, making it possible to use remote-control devices to record shot times. Four methods of registering times are discussed. The "Taiga" ground remote-control apparatus recommended consists of 20 to 30 six-channel magnetic recorders, two to three units for preliminary reproduction, one control console, and a stationary reproducing unit. Graphs of the distribution of differences between calculated and true times of explosions show a maximum difference of 0.01 sec. It is claimed that this method of seismic air bombing decreases the costs of seismic sounding by a factor of about 5 and increases work productivity by a factor of 10. Orig. art. has: 2 figures, 6 formulas, and 2 tables. [EO]

SUB CODE: ES/ SUBM DATE: 27Dec64/ ORIG REF: 009/ OTH REF: 000/ ATD PRESS: 4130

Card 2/2

ACC NR: AT6005062 (N) SOURCE CODE: UR/0000/65/000/000/0147/0163

AUTHOR: Chichinin, I. S.

ORG: none

TITLE: Problems of the theory of seismic vibrosounding

SOURCE: AN SSSR. Sibirskoye otdeleniye. Institut geologii i geofiziki. Metodika seysmorazvedki (Methods of seismic prospecting). Moscow, Izd-vo Nauka, 1965, 147-163

TOPIC TAGS: seismic prospecting, vibration analysis, vibration generator, signal to noise ratio

ABSTRACT: A discussion is presented on the theoretical principles involved in seismic prospecting in which wide-band continuous vibrations are generated by a vibration generator. The detailed mathematical treatment is an application of the convolution theorem that makes it possible to determine the response of a system to a general excitation if its response to a unit step function is known. The source may be a vibration generator or it can be any industrial or natural source which excites continuous, long-duration seismic vibrations with a wide-band energy spectrum. The "system" is a geological medium with a linear response (assumed) to an impulse source. No restrictions are imposed on the nature of the fields except that, in comparing different sources, it is assumed that the laws of spatial distribution of these fields remain unchanged. Thus, the problem is to determine how and with what

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ACC NR: AT6005062

approximation a powerful impulse source (for example, an explosion) can be simulated by a low-power source operating for a comparatively long time. Algorithms are obtained for optimal processing of seismograms recorded from vibrational sources. Energy relationships are derived for reliably separating the useful signal $Y(t)$ from the background of seismic noise. The problem of qualitative differences between seismograms obtained from vibrational and impulse sources is discussed. It is assumed that the energy of the disturbances considered here is great enough that the background of microseisms in the final records can be neglected. It is concluded, on the basis of energy-gain considerations, that the disturbing process must be of very long duration, but because the proper filters (whose impulse responses would be of long duration -- seconds or tens of seconds) are not now available, the method of vibration sounding can be realized only by developing special high-speed analog and digital computers. However, the method is theoretically promising because the spectral composition of the excited vibrations can be controlled with high accuracy and regulated by changing the operation of the vibration generator over a very wide range. Orig. art. has: 54 formulas. [EO]

SUB CODE: 08/ SUBM DATE: 30Sep65/ ORIG REF: 005/ OTH REF: 001

Card 2/2

GOL'TSMAN, F.M.; LIMBAKH, Yu.I.; MOISEYEV, O.N.; CHICHINOV, I.S.

Some uses of nonlinear schemes for frequency transformations in seismic apparatus. Vop.din.teor.raspr.seism.voln. no.2: 268-289 '59. (MIRA 13:5)
(Seismometry)

CHICHINOVA, T.V.

Frequency of cirrus clouds over the Kazakh S.S.R. Trudy TSAO no.35:83-94 '60. (MIRA 13:11)
(Kazakhstan--Clouds)

CHICHIRO, V.Ye.

The quality of work of the Moscow pharmacies should be improved. Apt.delo 2 no.3:5-8 My-Je '53. (MLRA 6:6)
(Moscow--Drugstores)

CHICHIRO, V. Ye.; SHILOV, Yu.M., kand. farm. nauk

Identification of motherwort preparations. Sbor. nauch. trud. TSANII 4: 130-135 '63 (MIRA 17:3)

1. Laboratoriya fizicheskoy khimii TSentral'nogo aptechnogo nauchno-issledovatel'skogo instituta.

SHILOV, Yu.M., kand.farm.nauk; CHICHIRO, V.Ye., aspirant

Color reactions to eucalyptic tincture. Sbor. nauch. trud. TSANII 3:115-119 '62. (MIRA 16:11)

1. Rukovoditel' laboratorii fizicheskoy khimii TSentral'nogo aptechnogo nauchno-issledovatel'skogo instituta.

CHICHIRO, V.Ye.

Identifying opium tincture by the chromatography method in a thin layer of an adsorbent. Apt. delo 12 no.6:36-39 N-D '63. (MIRA 17:2)

1. TSentral'nyy aptechnyy nauchno-issledovatel'skiy institut.

SHILOV, Yu.M.; CHICHIRO, V.Ye.

Identification of some antitubercular preparations. Aptech. delo 12 no.3:65-68 My-Je '63 (MIRA 17:2)

1. Tsentral'nyy aptechnyy nauchno-issledovatel'skiy institut.

CHICHIVANOV, R.P.

Equating the dynamics of control processes in closed electromechanical systems. Zap.Len.gor.inst. 35 no.1:76-82 '57. (MIRA 10:10)
(Mining machinery--Electric driving)

CHICHIVANOV, B.P.

Amplification, accuracy of control, and static conditions of closed electromechanical systems. Zap.Len.gor.inst. 35 no.1:83 '57.
(MIRA 10:10)
(Electric machinery) (Automatic control)

CHICHIVANOV, R.P., dots., kand.tekhn.nauk; FADEYEV, A.V., inzh.

Using an amplidyne in the drive of a high-voltage motor-generator set and the possibility of replacing it by direct-current machines. Nauch.dokl.vys.shkoly; gor.delo. no.4:129-135 '58. (MIRA 12:1)

1. Predstavleno kafedroy obshchey elektrotekhniki i elektricheskikh mashin i laboratoriyey avtomatiki i telemekhaniki Leningradskogo gornogo instituta imeni G.V. Plekhanova.

(Mining machinery--Electric drive)
(Magnetic amplifiers)

14(5) SOV/127-59-3-6/22

AUTHORS: Malinovskiy, N.Ya, Chichivanov, R.P., Blagonravov, V.I., Kirichok, Yu. G. and Popovich, F.N., Engineers.

TITLE: The Automatic Control of an Electrically Driven Hoist with an Exciter-Regulator (Avtomaticheskoye upravleniye elektroprivodom pod"yema s vozbuditelem-regulyatorom)

PERIODICAL: Gornyy zhurnal, 1959, Nr 3, pp 24-26 (USSR)

ABSTRACT: Laboratoriya avtomatiki i telemekhaniki Leningradskogo gornogo instituta (Laboratory of Automation and Telemechanics of the Leningrad Mining Institute) developed a new automation system for skip hoisting in the Severnaya Mine of the Mine Management imeni Kirov. A normal direct current motor of PN-100 type is used as an exciter-regulator of the generator. To make the use of such motor possible, its parallel winding was divided in two parts. This winding, generally consists of two coils on each pole. The dividing consists in connecting coils with a larger

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The Automatic Control of an Electrically Driven Hoist with an Exciter-Regulator.

number of turns in series, which form a master winding of the regulator. Coils with smaller number of turns, connected similarly, form the winding of the regulating feedback. This system replaced the old automation system which used a EMR regulator of longitudinal field. The new system stepped-up hoisting operations. There are 2 oscillograms, 1 diagram and 2 Soviet references.

CHICHIVANOV, R.P.

Vsesoyuznoye ob"yedinennoye soveshchaniye po avtomatizatsii proizvodstvennykh protsessov v mashinostroyenii i avtomatizirovannomu elektroprivodu v promyshlennosti. 3d, Moscow, 1959

Elektroprivod i avtomatizatsiya promyshlennykh ustanovok; trudy soveshchaniya (Electric Drive and Automation in Industrial Systems; Transactions of the Conference) Moscow, Gosenergoizdat, 1960. 470 p. 11,000 copies printed.

General Eds.: I.I. Petrov, A.A. Sirotin, and M.G. Chilikin; Eds.: I.I. Sud, and N.F. Ilyin; Tech. Eds.: K.P. Vorontsov, and G.Ye. Larionov.

PURPOSE: The collection of reports is intended for the scientific and technical personnel of scientific research institutes, plants and schools of higher education.

COVERAGE: The book is a collection of reports submitted by scientific workers at plants, scientific institutes and schools of higher education at the third Joint All-Union Conference on the Automation of Industrial Processes in Machine Building and Automated Electric Drives in Industry held in Moscow on May 12-16, 1959. The Conference was called by the Academy of Sciences USSR, the Gosplan SSSR (State Planning Commission USSR), the GNTK SSSR, the Gosudarstvennyy Komitet po avtomatizatsii i mashinostroyeniyu (State Committee on Automation and Machine Building) and the Natsional'nyy Komitet SSSR po avtomaticheskomu upravleniyu (USSR National Committee on Automatic Controls) and prepared by the Nauchno-tekhnicheskiy komitet po avtomatizirovannomu elektroprivodu (Scientific and Technical Committee on Automated Electric Drives), the MEI (Moscow Institute of Energetics), the VNIIEM, the IAT (Institute of Automation and Telemechanics) of the Academy of Sciences USSR, and the Komissiya po tekhnologii mashinostroyeniya Instituta mashinovedeniya AN SSSR (Commission on the Technology of Machine Building of the Institute of Science of Machines of the Academy of Sciences USSR). It was the purpose of the Editorial Board to arrange the reports in a way which would ensure a relatively systematic presentation of theoretical and practical problems relating to electric drives and automatic controls of industrial mechanisms used in various branches of industry. Basic problems of automated electric drive and their solution are outlined. The book also contains articles on electric machinery and means of automation. Considerable attention is paid to noncontact automatic control systems, including systems with semiconductor devices and magnetic amplifiers, and to computers intended both for the analysis and the synthesis of linear and nonlinear automatic regulation and control systems. Reports already published in journals or official publications have been considerably abbreviated; those which have appeared in volume V of NII EP transactions or in the journal "Elektrichestvo" are marked with an asterisk. No personalities are mentioned. References accompany some of the papers.

PART I. GENERAL PROBLEMS CONCERNING THE THEORY AND PRACTICE OF ELECTRIC DRIVE AND AUTOMATION OF CONTROL

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CHICHKAN, A.

The obligation taken is being carried out. Mast.ugl. 5 no.6:22 Je '56. (MLRA 9:8)

1. Brigadir prokhodchikov shakhty imeni Kalinina Stalinskoy oblasti. (Donets Basin--Coal mines and mining)

CHICHKAN', A.V., inzh.; VERETNIK, L.D., kand. tekhn. nauk

Automatic argon-arc welding of aluminum pistons of the D-70 diesel engine. Svar. proizv. no.2:31-32 F '65.
(MIRA 18:3)

1. Teplovozostroitel'nyy zavod im. Malysheva.

CHICHKAN, V.S., inzh.

Reinforcing the axial plane of an inclined mine shaft. Sbor.nauch.trud. KGRI no. 21: 69-172 '63. (MIRA 17:7)

FEDORCVSKIY, A.A., dotsent, kand.tekhn.nauk; CHICHKAN, V.S., gornyy inzh.; GARBUZ, V.T., gornyy inzh.

Study of the DA-2 depth gauge. Sbor.nauch.trud. KGRI no. 21:158-164 '63. (MIRA 17:7)

3

4E2c

Our Experience on the Increase of Stability of the Arches of Martin Furnaces. O. N. Averkin and A. N. Chechkarov.

[illegible]

[illegible]

[illegible]

control of [illegible]

repairs to lining, blowing of accumulated dust [illegible]

particulars. [illegible]

Smenyy Teplotekhnik martenovskogo tsekh. [illegible] H. ... Tki metallurgicheskiy kombinat.

SOV/137-58-9-18668

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 73 (USSR)

AUTHORS: Astrov, Ye. I., Chichkanov, A.I., Kalmykov, Yu.D.

TITLE: Manufacture of Laminated Steel for Industrial Cutting Blades (Proizvodstvo dvukhsloynoy stali dlya promyshlennykh nozhey)

PERIODICAL: V sb.: Staleplavil'n. proiz-vo. Moscow, Metallurgizdat, 1958, pp 225-235

ABSTRACT: Hitherto, laminated steel for the manufacture of industrial cutting blades was made at the Gor'kiy Metallurgical Plant by pile-up welding of Nr-10 steel billets with alloy steel inserts. A new process has been developed consisting of pouring mild steel around a plate of alloy steel mounted in a mold by means of special fastenings. In order for the layers to weld well, the surface of the plate must be clean; toward this end it is covered with a carbonaceous lacquer. The quality of the welding of the layers also depends upon the conditions obtaining during the pouring of the liquid metal around the plate and, in particular, upon the speed with which the mold is filled. As [C] and the degree of alloying of the steel rises, its weldability diminishes. When VI and 6 KhS plates have molten metal poured around

Card 1/2

Manufacture of Laminated Steel for Industrial Cutting Blades

them, no cracks are observed. However, as the result of the high temperature of heating and the subsequent slow cooling in the body of the ingot, the grains become larger; localization of carbides along grain boundaries is also observed in V1 steel. It is established that the degree of dissolution of carbides and the liquidation of the carbide pattern is determined by the conditions of rolling, cooling, and heat treatment of the strip. When the actual temperature at the end of rolling is 1000 to 1030°C, the most effective method of combatting carbide pattern is to heat knife blanks to 910-930°, hold them at that temperature for 1 hour and then cool in water to 600-650°. The knives are then subjected to standard heat treatment. If the steel used for the cutting portion of the knife is low in [C] (to 0.75-0.85%) the difficulties encountered in the elimination of carbide pattern disappear. Knives of laminated steel made by pouring molten metal around a plate have shown high qualities in actual use.

1. Steel--Processing 2. Laminates--Application 3. Cutting tools --Production 4. Welding--Applications

L.K.

Card 2/2

AUTHORS: Astrov, Ye. I., Chichkanov, A. I. 32-24-6-34/44

TITLE: A Method for the Investigation of the Weldability of Metals in Common Plastic Deformation (Metod issledovaniya svarivayemosti metallov pri sovmestnom plasticheskom deformirovanii)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 6, pp. 768 - 77o (USSR)

ABSTRACT: The methods used at present are inaccurate and incomplete as no reproducible measuring values can be obtained. This is explained by the different shape and dimensions of the dies used in the examination as well as by the nature of impression. The weldability of the layers of bimetals obtained according to different methods can be determined by the method of I. A. Nenayezdnikov (Ref 2), but a larger amount of samples is required. A simple method of investigating the weldability of multilayer metals by rolling bimetallic wedges is proposed. The preparation of the wedges is explained by diagrams, and data are given with respect to some steel samples heated in a Mars furnace at various temperatures,

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A Method for the Investigation of the Weldability of Metals in Common Plastic Deformation

which were then investigated. Results show that there exists a function between weldability, temperature and the extent of deformation; more detailed data on the various steel samples investigated are mentioned. The data obtained testify to the many years of experience gathered by the Gor'kiy Metal Works which produce two-layer steel for industrial knives as well as other multilayer materials. By employing the method described it is now easier than before to determine the optimum conditions for heating and rolling by just rolling the bimetallic wedge-shaped samples at laboratory conditions. There are 3 figures and 4 references, 4 of which are Soviet.

ASSOCIATION: Gor'kovskiy metallurgicheskiy zavod
(Gor'kiy Metallurgical Works)

1. Metals--Welding 2. Metals--Test methods 3. Metals--Deformation
4. Metals--Test results

CHICHKANOV, A.I.

25(1)

PHASE I BOOK EXPLOITATION SOV/2727

Obrabotka metallov davleniyem; sbornik statey, vyp. 5 (Metal Forming; Collection of Articles, No. 5) Moscow, Metallurgizdat, 1959. 197 p. 3,000 copies printed.

Scientific Ed.: L.Kh. Al'shevskiy, Candidate of Technical Sciences; Ed. of Publishing House: N.A. Valev; Tech. Ed.: A.I. Karasev.

PURPOSE: This collection of articles is intended for technical personnel and scientific workers in the metallurgical and machinery-construction industries.

COVERAGE: This collection of articles deals with problems of rolling and tube manufacture. Results of research done on roll design and new methods of determining basic manufacturing parameters in the production of tubes and other rolled shapes are presented. Methods of analyzing the kinematics of processes in helical piercing mills and rolling mills by means of motion pictures are discussed. Also discussed are several phenomena associated with tube rolling. No personalities are mentioned. References follow several of the articles.

Zarubin, P.F. [Engineer, Ural'skiy institut chernykh metallov (Ural Institute of Ferrous Metallurgy)]. Means of Increasing the Productivity of Mechanized Sheet Mills 53
This article deals with the results of an investigation conducted at the Severskiy Zavod (Severskiy Plant). N.S. Smirnov, L.V. Makarov, N.R. Rimm, and N.P. Shirinkin took part.

Astrov, Ye.I. [Candidate of Technical Sciences], A.I. Chichkanov, L.N. Tikhonov, V.N. Miryukhin [Engineers], [Gor'kovskiy metallurgicheskiy zavod (Gor'kiy Metallurgical Plant)]. Rolling Kh17N2 Stainless Steel Into Universal Plates 62
The technique of heating and rolling ingots of Kh17N2 stainless steel in a universal rolling mill is described. Mechanical properties and structures obtained are discussed.

Gel'derman, L.S. [Candidate of Technical Sciences, Nauchno-issledovatel'skiy institut (Scientific Research Institute)]. Characteristics of the Macrostructure of Plates in Relation to Rolling Conditions 72
The mechanical properties of rolled open-hearth steel plates in relation to the rolling regime and initial shapes are discussed. Photographs of the macrostructures are presented.

Astrov, Ye.I. [Candidate of Technical Sciences]. Laminated Steels 83
A method of making laminated steel is discussed. Laminated ingots obtained by teeming in molds with distance plates are rolled to a desired thickness. This method is claimed to be the most efficient for mass production.

Chekmarev, A.P. [Academician, Academy of Sciences, UkrSSR], Ya.S. Finkel'shteyn [Candidate of Technical Sciences], and I.M. Iudenskiy [Engineer], [Institute of Ferrous Metallurgy, Academy of Sciences, UkSSR, and Truboprokatnyy zavod imeni Lenina (Tube-rolling Mill imeni Lenin)]. Means of Intensifying the Piercing Process by Helical Rolling 94
Forces active in steady helical piercing are analyzed. Results of experiments in rolling are presented. Recommendations for intensifying the piercing process are made.

6/

CHICHKANOV, A.I.

Work of the Central Laboratory of the Gor'kii Metallurgical Plant. Zav. lab. 31 no.9:1155-1156 '65. (MIRA 18:10)

1. Nachal'nik TSentral'noy laboratorii Gor'kovskogo metallurgicheskogo zavoda.

CHICHKANOVA, L.P., mladshiy nauchnyy sotrudnik; KEDROVA, A.F.

Open lesions of the tendon of Achilles in the workers of a machinery plant. Ortop., travm. i protez. 25 no.7:42-44 Jl '64. (MIRA 18:8)

1. Iz Novosibirskogo instituta travmatologii i ortopedii (dir. - dotsent D.P.Metelkin) i mediko-sanitarnoy chasti (nachal'nik - V.I.Panfilova) Mashinostroitel'nogo zavoda "Sibsel'mash", Novosibirsk.

KISSEL'MAN, A.S.; KASHIN, N.V., nauchnyy red.; CHICHKANOVA, V.S., red.; TSAL, R.K., tekhn.red.

[Universal lathe operator in the manufacture of instruments] Tokar'-universal v priborostroenii. Leningrad, Gos.soiuznoe izd-vo sudostroit.promyshl., 1959. 254 p. (MIRA 13:2)
(Turning)

YAKOVLEV, Georgiy Semenovich; TRAPER, Ye.I., inzh., retsenzent; CHEKUNOV, K.A., inzh., retsenzent; BOYTSOV, A.Ye., nauchnyy red.; CHICHKANOVA, V.S., red.; ERASTOVA, N.V., tekhn. red.

[Marine electric power systems] Sudovye elektroenergeticheskie sistemy. Leningrad, Gos.soiuznoe izd-vo sudostroit.promyshl., 1961. 351 p. (MIRA 14:12)

(Electricity on ships)

DYMARSKIY, Yakov Semenovich; LOZINSKIY, Nikolay Nikolayevich; MAKUSHKIN, Aleksandr Timofeyevich; ROZENBERG, Vladimir Yakovlevich; ERGLIS, Vladimir Rudol'fovich; OGANESYAN, L.A., kand. tekhn. nauk, retsenzent; GINZBURG, R.I., kand. tekhn. nauk; BUROV, V.N., nauchn. red.; CHICHKANOVA, V.S., red.; KONTOROVICH, A.I., tekhn. red.

[Programmer's manual] Spravochnik programmista. [By] IA.S. Dymarskii i dr. Leningrad, Sudpromgiz. Vol.1. 1963. 627 p. (MIRA 16:9)
(Programming (Electronic computers))--Handbooks, manuals, etc.)

ALYAB'YEV, Mikhail Ivanovich; TRESHCHEV, I.I., doktor tekhn. nauk retsenzent; MEZIN, Ye.K., kand. tekhn. nauk, nauchn. red.; CHICHKANOVA, V.S., red.

[General theory of electric machinery on ships] Obshchaia teoriia sudovykh elektricheskikh mashin. Leningrad, Sudostroenie, 1965. 390 p. (MIRA 18:5)

BELKIN, A.; BORISOV, A.; GENIN, B.; GUSLITSER, I.; GRUZDEV, V.; DICH,S.; DUSEYEVA, Ye.; YEGOROVA, A.; ZAK, S.; KAZYMOV, A.; KRUPENNIKOVA,Ye.; KONKIN, A.; MOGILEVSKIY, Ye.; PAKSHVER, A.; SMELKOV, G.; CHICHKHIANI, A.; CHUGUNOV, K.; SHIFRIN, L.; YUNOVICH, E.

Sergei Alekseevich Tairov. Khim.volok. no.3:79 '62.
(MIRA 16:2)
(Tairov, Sergei Alekseevich)

CHICHKIN, A.

Overstaffing in the lumber industry of the Udmurt A.S.S.R.
Fin. SSSR 16 no.6:66-68 Je '55. (MLRA 8:6)
(Udmurt A.S.S.R.--Lumbering)

Chichkin, A

CHICHKIN, A.

Personnel and organizational surplus. Fin.SSSR 17 no.8:64-65 Ag '56. (MIRA 10:12)
(Udmurt A.S.S.R.--Finance)

CHICHKIN, A.

Here they are, the potentials! Fin.SSSR 21 no.5:54-55 My '60.
(MIRA 13:7)

1. Nachal'nik shtatnogo otdela Ministerstva finansov Udmurtskoy ASSR.

(Udmurt A.S.S.R.--Industrial management)

IBAN'YEV, F.F., inzh.; LIBERMAN, V.B., inzh.; ORESHKIN, V.I., inzh.; CHICHKIN, A.F., inzh.

Using the EV80-3 electronic computer for plotting monthly schedules. Mekh.i avtom.proizv. 17 no.9:35-37 S '63. (MIRA 16:10)

BOGOLYUBSKIY, N.; BORISOV, S.; GRIGOR'YEV, N.; GUSAROV, M.; GUSEV, L.; ZHAROV, S.; ZHETVIN, N.; ZALOGIN, S.; ZOLOTOV, G.; INOZEMTSEV, N.; KLEMENT'YEVA, A.; KOMAROV, A.; KOSMACHEV, V.; LAPTEV, V.; LOMONOSOV, V.; MIKHAYLOV, A.; NOVIKOV, I.; PERTSEV, M.; PROKOPOVICH, P.; ROMANOV, I.; RUBLINSKAYA, R.; SVIRIDOV, G.; SOTNIKOV, G.; SUBBOTIN, A.; TURTANOV, I.; CHESNOKOV, S.; CHICHKIN, K.; CHIKHANOV, I.

Grigorii Markelovich Il'in; an obituary. Metallurg 3 no.10:36 O '58. (MIRA 11:10)

(Il'in, Grigorii Markelovich, 1894-1958)

GAZENKO, O.G.; LIMANSKIY, Yu.P.; RAZUMEYEV, A.N.; IZOSIMOV, G.V.; BARANOV, V.I.; CHICHKIN, V.A.; GAYDAMAKIN, N.A.

Method for recording the action potentials of neurons of the vestibular nuclei in adequate stimulation of vestibular receptors in cats. Izv.AN SSSR.Ser.biol. no.6:925-928 N-D '62. (MIRA 16:1)

(LABYRINTH(EAR)--INNERVATION)(ELECTROPHYSIOLOGY)

L 29437-66 EWT(1) SCTB DD/GD

ACC NR: AT6012902 SOURCE CODE: UR/0000/65/000/000/0241/0244

27

AUTHOR: Kakurin, L.I.; Kotovskaya, A.R.; Filosofov, V.K.; Chekhonadskiy, N.A.; Chichkin, V.A. B+1

ORG: none

TITLE: The influence of G-force and hypodynamia on the reaction of the operator

SOURCE: Sistema chelovek i avtomat (Man-automaton systems). Moscow, Izd-vo Nauka, 1965, 241-244

TOPIC TAGS: biologic gravity effect, hypodynamia, human physiology

ABSTRACT: Of special interest in the investigation of semiautomatic control systems is the question of the nature of the influence of such factors as G-force, weightlessness, hypodynamia (restricted movements), etc., on the reaction of the operator. The authors performed an investigation in which the input device of the man-operator was the visual analyzer, and the output device the motion of the hand (finger). The visual analyzer is a highly perfected organ and is characterized by a high resolution factor and relatively high reliability. For an operator under normal conditions, the mathematic expectancy of the delay time in the recognition of light signals is 0.20 sec; furthermore, as established by I. Ye. Tsibulevskiy (Zapazdyvaniye operatora pri obrabotke zritel'nykh signalov.— AiT, 1962, 33, no. 11), delay depends on the age of the operator (the correlation between delay and the operator's age is 0.42). The present article is devoted to the study of the influence of G-force and hypodynamia on the reaction

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ACC NR: AT6012902

of the operator while the operator is in the process of recognizing single, random visual signals. On the basis of data analysis, the authors conclude that when the operator is subjected to G-force his reaction time to a light signal increases. An analytical form of the relationship, which takes into account the relative location of the light indicator on the signal panel, may be approximately described by the empirical formula

$$\tau_1 = 0{,}21\ (1 + \beta) + (0{,}01 + 0{,}5\ \beta)\ n,$$

where β is the coefficient of the relative location of the light indicators on the signal panel, and n is the G-force. The influence of hypodynamia (for a specific group) is also manifested in an increased reaction time. Orig. art. has: 2 formulas, 1 table, and 3 figures. [08]

SUB CODE: 06/ SUBM DATE: 2Aug65/ ORIG REF: 002 / ATD PRESS: 5109

Card 2/2

CHICHKIN, V.A.

ACCESSION NR: AT4042705 S/0000/63/000/000/0368/0371

AUTHOR: Myasnikov, A. L.; Akhrem-Akhremovich, R. M.; Kakurin, L. I.; Pushkar', Yu. T.; Mukharlyamov, N. M.; Georgiyevskiy, V. S.; Tokarev, Yu. N.; Senkevich, Yu. A.; Katkovskiy, B. S.; Kalinina, A. N.; Cherepakhin, M. A.; Chichkin, V. A.; Filosofov, V. K.; Shamrov, P. G.

TITLE: Effect of prolonged hypokinesia on blood circulation in man

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy konferentsii. Moscow, 1963, 368-371

TOPIC TAGS: isolation, prolonged isolation, isolation chamber, isolation effect, bioelectric activity

ABSTRACT: Four young men 22 to 24 were subjected to voluntary bedrest for a period of 20 days. Tests on pulse, arterial pressure, rate of blood flow, venous pressure, etc., were run before and after the completion of the experiment. These tests were performed at rest and after functional exercises (30 knee bends at the rate of one every 1.5 sec). During the period of bedrest, pulse frequency diminished on the average by 14 strokes per minute; the arterial pressure diminish-

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ACCESSION NR. AT4042705

ed by 11.2 mm of Hg. Stroke volume diminished on the average by 6 ml, while the minute rate of blood flow was reduced by 1.6 liters. After completion of the bed regime, pulse frequency rose by 18 to 34 strokes per minute, while systolic pressure and minute blood volume increased. Deep knee bends brought about characteristic increases in the pulse rate and changes in arterial pressure and phases of the cardiac cycle. The length of time required for these indices to return to normal increased from three minutes to seven minutes. It can be assumed that similar functional changes in the cardiovascular system will take place in man after his return to normal gravity following prolonged weightlessness.

ASSOCIATION: none

SUBMITTED: 27Sep63 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 00

Card 2/2

MECHAYEV, Vyacheslav Vasil'yevich; YAKOVLEV, G.S., retsenzent; CHICHKIN, V.M., retsenzent; FRIK, A.O., inzh., red.; SHLENNIKOVA, Z.B., red.izd-va; POKHLEBKINA, M.I., tekhn.red.

[Electric equipment of ships used in inland-water transportation] Elektricheskoe oborudovanie sudov vnutrennego plavaniiia. Moskva, Izd-vo "Rechnoi transport," 1960. 341 p. (MIRA 14:4)

1. Nachal'nik otdela elektroradiooborudovaniya i avtomatiki TSentral'nogo tekhniko-konstruktorskogo byuro (for Yakovlev).
(Inland water transportation)
(Ships--Electric equipment)

S/044/62/000/006/008/127
B112/B104

AUTHOR: Chichkin, Ye. S.

TITLE: Some oscillation theorems for linear differential equations

PERIODICAL: Referativnyy zhurnal. Matematika, no. 6, 1962, 43, abstract 6B187 (Uch. zap. Kazansk. un-ta, v. 117, no. 9, 1957, 9 - 10)

TEXT: The mutually adjoint linear differential operations $L[y]$ and $\bar{L}[y]$ are considered, where

$$L[y] = y^{(n)} - \sum_{k=0}^{n-1} p_k y^{(k)}$$

The interval (a, b) is called the non-oscillation interval for the equation $L[y] = 0$ if an arbitrary non-trivial solution on (a, b) has not more than n-1 zeros. In addition, some theorems are formulated without proofs of the non-oscillation interval for the case of third-order operators.
[Abstracter's note: Complete translation.]

Card 1/1

AZBELOV, N.V.; TSALYUK, Z.B.; CHICHKIN, Ye.S.

Nonoscillations of solutions of nonlinear equations of the second order. Izv. vys. ucheb. zav.; mat. no.2:3-4 '58. (MIRA 11:5)

1. Izhevskiy mekhanicheskiy institut.
(Differential equations)

AUTHOR: Chichkin, Ye.S. SOV/140-58-3-32/34

TITLE: On the Question of the Nonoscillation for Linear Equations of Fourth Order (K voprosu o neostsillyatsii dlya lineynykh uravneniy chetvertogo poryadka)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy Matematika. 1958. Nr 3, pp 248-250 (USSR)

ABSTRACT: Theorem: Let $A(x)$ be continuously differentiable on $[a,b]$. In order that the solution of the equation

(1) $$y^{IV} + A(x)y = 0$$

have not more than four zeros on $(a,c) \subset (a,b)$, it is sufficient that there exist two functions $p(x,s)$ and $q(x,s)$ on (a,c) which satisfy the following properties 1.) $p(x,s)$ is four times and $q(x,s)$ five times continuously differentiable with respect to x,

2.) $$\left[\frac{\partial^k p}{\partial x^k}\right]_{x=s} = 0 \quad (k=0,1,2), \qquad \left[\frac{\partial^3 p}{\partial x^3}\right]_{x=s} = 1$$

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On the Question of the Nonoscillation for Linear Equations of Fourth Order

SOV/140-58-3-32/34

$$\left[\frac{\partial^k q}{\partial x^k}\right]_{x=s} = 0 \quad (k=0,1,2,3), \quad \left[\frac{\partial^4 q}{\partial x^4}\right]_{x=s} = -1$$

3.) in the triangle $a \leqslant s \leqslant x \leqslant c$ it is

$$\frac{\partial^4 p}{\partial x^4} + A(x)p \leqslant 0 , \quad p > 0 \quad \text{for} \quad x \neq s$$

$$\frac{\partial^5 q}{\partial x^5} - 4A(x)\frac{\partial q}{\partial x} - 2A'(x)q(x,s) \geqslant 0 , \quad q < 0 \quad \text{for} \quad x \neq s$$

Theorems: Let on (a,c) be $\alpha \geqslant A(x) \geqslant \beta$, $A'(x) \leqslant \gamma$. The solution of $v^{IV} + \alpha v = 0$, $v(a) = v'(a) = v''(a) = 0$, $v'''(a) = 1$ is assumed to be positive on (a,c). Let the derivative v' of the solution of $v^{(5)} - 4\beta v' - 2\gamma v = 0$, $v(a) = v'(a) = v''(a) = v'''(a) = 0$, $v^{IV}(a) = -1$ be negative on (a,c). Then (1) does not possess more than four zeros on (a,c).

There are 4 references, 3 of which are Soviet, and 1 German.

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On the Question of the Nonoscillation for Linear Equations of Fourth Order SOV/140-58-3-32/34

ASSOCIATION: Kazanskiy gosudarstvennyy universitet imeni V.I.Ul'yanova-Lenina (Kazan' State University imeni V.I.Ul'yanov-Lenin)

SUBMITTED: January 18, 1958

Card 3/3

16(1)
AUTHOR: Chichkin,Ye.S.

05267
SOV/140-59-5-23/25

TITLE: On the Non-Oscillation of the Solutions of Nonlinear Differential Equations of Third and Fourth Order

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1959, Nr 5, pp 219-221 (USSR)

ABSTRACT: Let the right side of

(1) $y^{(n)} = f(x,y,y',\ldots y^{(n-1)})$

be continuous in G: $a \leqslant x \leqslant b$, $a_k \leqslant y^{(k)} \leqslant b_k$. Let for every point $(x_o,y_o,y_o',\ldots,y_o^{(n-1)}) \in G$ exist a unique solution satisfying the initial conditions $y^{(k)}(x_o) = y_o^{(k)}$ $(k=0,1,\ldots,n-1)$. The interval $[a,c) \subset [a,b]$ is called an interval of non-oscillation of (1) if the difference $u = y_1 - y_2$ of two arbitrary solutions of (1) on $[a,c)$ has at most n-1 zeros. Let K(x,s) be the Cauchy function of

(2) $L[y] \equiv y^{(n)} - \sum_{k=0}^{n-1} P_k y^{(k)} = 0.$

Let $r(s) \equiv \min[b,x_s]$, where x_s is the first zero of K(x,s) at the right hand side of s.

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On the Non-Oscillation of the Solutions of Nonlinear Differential Equations of Third and Fourth Order

Lemma: Let $r(s)$ be not decreasing. Necessary and sufficient that $K(x,s)$ is positive in $a \leqslant s < x < c$, $c = r(a)$, $c \leqslant b$, is the existence of an n times continuously differentiable function $w(x)$ on $[a,c]$ which satisfies the conditions: $w^{(k)}(a) = 0$, $k=0,1,\ldots,n-2$; $w^{(n-1)}(a) = 1$; $w(x) > 0$; $L[w(x)] \leqslant 0$ for $a < x < c$.

Theorem 1: If in

(4) $$y^{(n)} + A(x)y = 0 \quad (n=3,4)$$

$A(x) \geqslant 0$ is continuous on $[a,b]$, then $[a,c)$ is an interval of non-oscillation then and only then if in $a \leqslant s < x < c$ it holds $K(x,s) > 0$.

Theorem 2: Let $q(x) \leqslant \frac{\partial f}{\partial y} \leqslant 0$ for $A \leqslant y \leqslant B$, where $q(x)$ is a function continuous on $[a,b]$. Then the interval of non-oscillation of

(5) $$v^{(n)} = q(x)v$$

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On the Non-Oscillation of the Solutions of Nonlinear Differential Equations of Third and Fourth Order

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is also the interval of non-oscillation of

(1') $y^{(n)} = f(x,y)$ $(n=3,4)$;

where $\frac{\partial f}{\partial y}$ is continuous in $a \leqslant x \leqslant b$, $A \leqslant y \leqslant B$.

The author mentions N.V.Azbelev, Z.B.Tsalyuk, and Chaplygin. There are 6 references, 5 of which are Soviet, and 1 Polish.

ASSOCIATION: Kazanskiy gosudarstvennyy universitet imeni V.I.Ul'yanova-Lenina (Kazan' State University imeni V.I.Ul'yanov-Lenin)

SUBMITTED: October 15, 1958

Card 3/3

85507

S/140/60/000/004/023/023 XX
C111/C222

16.3400

AUTHOR: Chichkin, Ye.S.

TITLE: On a Non-Oscillation Theorem for the Linear Selfadjoint Differential Equation of Fourth Order

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1960, No. 4, pp. 206 - 209

TEXT: Definition: $[a,c) \subset [a,b)$ is called interval of non-oscillation of

$$(1) \quad L[y] = \frac{d^4y}{dx^4} + \frac{d}{dx}\left(p(x)\frac{dy}{dx}\right) + q(x)y = 0 \ ,$$

where $p(x)$ and $q(x)$ are continuous on $[a,b)$ if every non-trivial solution of (1) has not more than three (with consideration of the multiplicities) zeros.
Let $K(x,s)$ be the Cauchy function of (1). Let the operation $L[y]$ satisfy the condition W on $[a,b)$ if

$$(*) \quad K(x,s) > 0 \quad \text{for } a \leq s < x < b \ .$$

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B5507

On a Non-Oscillation Theorem for the Linear Selfadjoint Differential Equation of Fourth Order

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C111/C222

Let

$$(2) \qquad L^*[y] = \frac{d^4y}{dx^4} + \frac{d}{dx}\left(p^*(x)\frac{dy}{dx}\right) + q^*(x)y = 0 \ ,$$

where $p^*(x) \geq p(x)$, $q^*(x) \leq q(x)$ for $x \in [a,b)$.

Theorem 1 : In order that $[a,c) \subset [a,b)$ is an interval of non-oscillation for (1), it is necessary and sufficient that 1) there exists an operation $L^*[y]$ so that every non-trivial solution of $L^*[y] = 0$ in $[a,c)$ has not more than a double zero.

2) the operation $L[y]$ satisfies the condition W on $[a,c)$.

Conclusion 1: If $p(x) \leq 0$, $q(x) \geq 0$, $x \in [a,c)$, then the condition 1) in theorem 1 is superfluous.

Conclusion 2: If $p(x) \leq \frac{\alpha}{x^2}$, $q(x) \geq \frac{\beta(\alpha)}{x^4}$, $x \in [a,c)$, where

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On a Non-Oscillation Theorem for the Linear Selfadjoint Differential Equation of Fourth Order

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$$\beta(\alpha) = \begin{cases} \frac{5}{4}\alpha - \frac{5}{16} & \text{for } \alpha \neq \frac{5}{2} \\ \frac{(\alpha+2)^2}{4} & \text{for } \alpha \geq \frac{5}{2} \end{cases}$$

, then the condition 1) in theorem 1 is superfluous.

Conclusion 3 : For a finite $\alpha \neq \frac{5}{2}$ let

$$\int^{\infty} x \ln x \, \varphi(x)dx < \infty \quad , \quad \int^{\infty} x^3 \ln x \, |\psi(x)|dx < \infty$$

where $\varphi(x) = \max\left[0, p(x) - \frac{\alpha}{x^2}\right]$, $\psi(x) = \min\left[0, q(x) - \frac{\beta(\alpha)}{x^4}\right]$.

In order that the solution of (1) on $[a,\infty)$ has finitely many zeros it is necessary and sufficient that for an $x_1 \geq a$ the operation $L[y]$ satisfies the condition W.

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On a Non-Oscillation Theorem for the Linear Selfadjoint Differential Equation of Fourth Order

S/140/60/000/004/023/023 XX
C111/C222

The author mentions N.V. Azbelev. There are 4 Soviet references.

ASSOCIATION: Kazanskiy gosudarstvenny universitet imeni V.I. Ul'yanova-Lenina (Kazan' State University imeni V.I. Ul'yanov-Lenin)

SUBMITTED: April 20, 1959

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Card 4/4

CHICHKIN, Ye.S.

Differential inequality theorem for multipoint boundary problems. Izv.vys.ucheb.zav.; mat. no.2:170-179 '62. (MIRA 15:8)

1. Kazanskiy gosudarstvennyy universitet imeni V.I.Ul'yanova-Lenina.
(Boundary value problems) (Inequalities (Mathematics))
(Differential equations)

PAK, S.A. (Izhevsk); CHICHKIN, Ye.S. (Izhevsk)

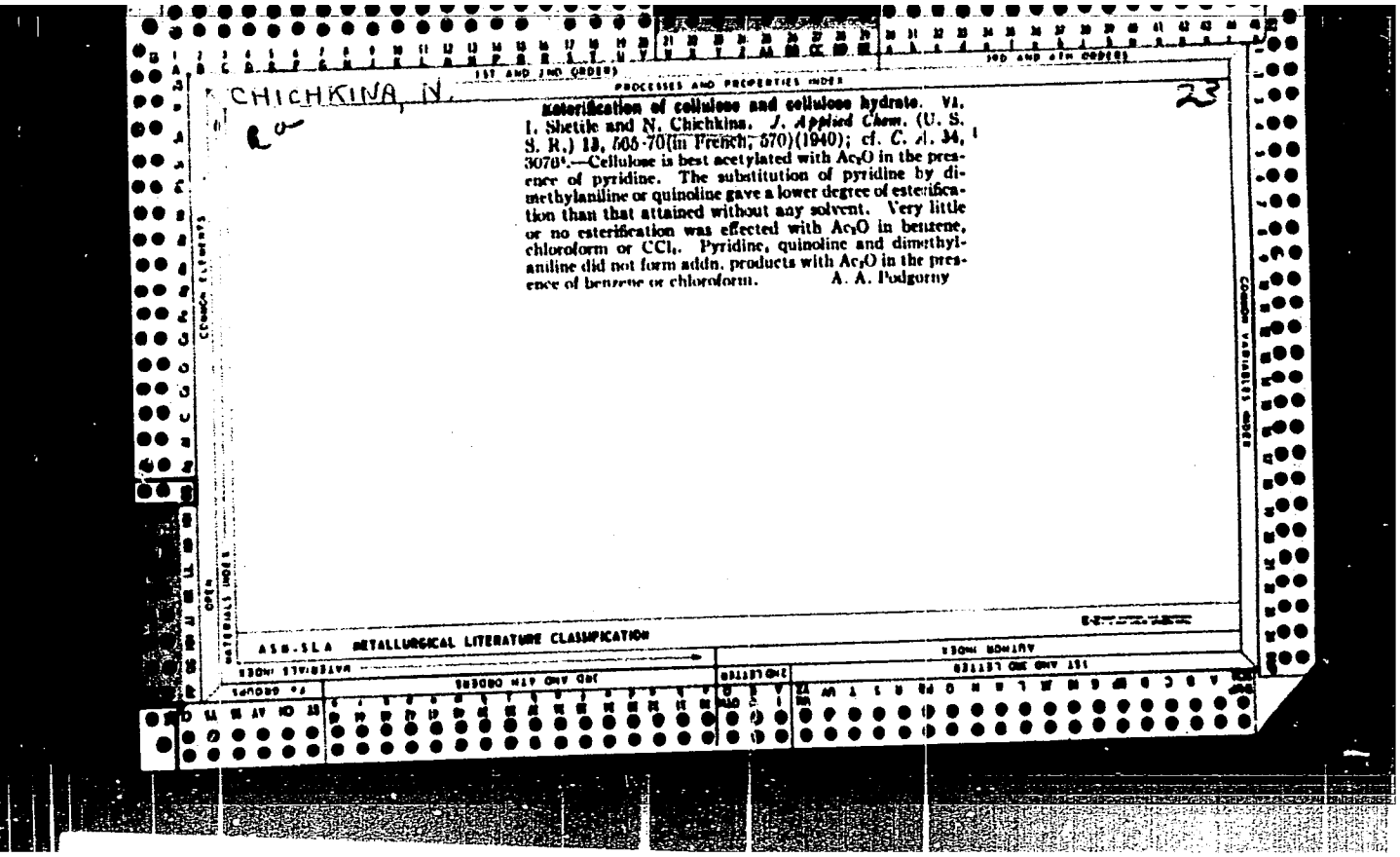
Existence of upper and lower bounds of solutions of the Cauchy problem for a second-order differential equation. Izv. vys. ucheb. zav.; mat. no.5:91-94 '64. (MIRA 17:12)

PAVLOV, A.N., otv. za vypusk; VOLODICHEVA, V.N.; IVANOVA, A.I.; KULAKOV, I.N.; LYAMINA, T.N.; MIT'KINA, L.I.; POZDNYAKOVA, N.P.; RODIONOVA, L.I.; ROMANOVA, N.M.; SOFIYEV, E.S.; CHICHKINA, A.A.; TRESORUKOVA, Z.G.; BOGATYREV, P.P.; BROVKINA, A.I.; IVANOVA, L.D.; IVASHKIN, G.A.; KAMNEV, N.I.; LYSANOVA, L.A.; OZHERKL'YEVA, Z.I.; PAVLOVA, T.I.; TYUTYUNOVA, N.I.; UMNITSYNA, A.P.; ZHIVILIN, N.N.; ALESHICHEV, M.P.; VINOGRADOV, V.I.; YEREMIN, F.S.; KRAVCHENKO, Ye.P.; LOVACHEVA, M.V.; NIKOL'SKAYA, V.S.; MAKHOV, G.I.; SKEGINA, A.V.; TARNYEV, A.V.; KHOLINA, A.V.; BRYANSKIY, A.M.; BURMISTROVA, V.D.; GRIGOR'YEVA, A.M.; LUTSENKO, A.I.; OREKHOVA, Z.V.; TEPLINSKAYA, N.V.; FEOKTISTOVA, V.I.; BUTORIN, I.M.; BOCHKAREVA, L.D.; BURENINA, V.A.; VETUSHKO, A.M.; VIKHLYAYEV, A.A.; SOROKIN, B.S.; TSYBENKO, L.T.; KHLEBNIKOV, V.N.; DUMNOV, D.I.; STEPANOVA, V.A.; MANYAKIN, V.I., red.; VAKHATOV, A.M.; MAKAROVA, O.K., red.izd-va; PYATAKOVA, N.D., tekhn.red.

[Soviet agriculture; a statistical manual] Sel'skoe khoziaistvo SSSR; statisticheskii sbornik. Moskva, 1960. 665 p.
(MIRA 13:5)

1. Russia (1923- U.S.S.R.) TSentral'noye statisticheskoye upravleniye. 2. Upravleniye statistiki sel'skogo khozyaystva TSentral'nogo statisticheskogo upravleniya SSSR (for all except Makarova, Pyatakova).

(Agriculture--Statistics)



CHICHKINA, N.

23

PROCESSES AND PROPERTIES INDEX

Esterification of cellulose and cellulose hydrate. VI. I. Shetile and N. Chichkina. *J. Applied Chem.* (U. S. S. R.) 13, 665-70(in French, 670)(1940); cf. *C. A.* 34, 3070⁹.—Cellulose is best acetylated with Ac_2O in the presence of pyridine. The substitution of pyridine by dimethylaniline or quinoline gave a lower degree of esterification than that attained without any solvent. Very little or no esterification was effected with Ac_2O in benzene, chloroform or CCl_4. Pyridine, quinoline and dimethylaniline did not form addn. products with Ac_2O in the presence of benzene or chloroform. A. A. Podgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CHICHKO, G.M.

AID P - 2104

Subject : USSR/Engineering

Card 1/2 Pub. 78 - 17/24

Authors : Safaryan, M. K. and Chichko, G. M.

Title : More precise method of calculating drop-shaped reservoirs

Periodical: Neft. khoz., v.33, no.4, 78-83, Ap 1955

Abstract : The advantages of drop-shaped reservoirs over the standard vertical cylindrical types are outlined. Experiments have shown that in long-term storing of light oil products evaporation losses are greatly reduced since most volatitle light fractions are under constant pressure in the upper part of the drop-shaped reservoir. When a drop-shaped shell is almost completely filled with liquid and the small space above it is filled with gas under pressure the hydrostatic pressure exercises equal tension stresses in all parts of the shell envelope and therefore the shell thickness can be made uniform in

Neft. khoz., v.33, no.4, 78-83, Ap 1955 AID P - 2104

Card 2/2 Pub. 78 - 17/24

all its parts. The only part which requires some reinforcement is the equatorial belt. Construction details are shown. Charts, diagrams.

Institution: None

Submitted : No date

CHICHKO, G. M., Candidate Tech Sci (diss) -- "Experimental and theoretical investigation of a new type of membranes". Moscow, 1959. 10 pp (Min Higher Educ USSR, Moscow Order of Labor Red Banner Construction Engineering Inst im V. V. Kuybyshev), 130 copies (KL, No 24, 1959, 143)

CHICHKO, G.M. (Alma-Ata)

Study of the strength of a drop-shaped shell or tank. Stroi. mekh. i rasch. soor. 3 no.5:18-21 '61. (MIRA 14:10)
(Tanks) (Elastic plates and shells)

ACC NR: AR6033807 SOURCE CODE: UR/0124/66/000/007/V012/V012

AUTHOR: Chichko, G. M.

TITLE: Membrane stress analysis of the shells of revolution by the method of finite differences

SOURCE: Ref. zh. Mekhanika, Abs. 7V91

REF SOURCE: Tr. Kazakhsk. politekhn. in-ta, sb. 25, 1965, 561-574

TOPIC TAGS: shell of revolution, stress analysis, shell structure, shell structure stability, shell buckling

ABSTRACT: The stress on shells of revolution under an arbitrary load is investigated. The resolving functions are expanded in a Fourier series in the circular variable, while the differential equations with respect to values which are functions of solely the meridian coordinate are replaced by difference equations derived by the expansion of the desired function into the Taylor series. In the analysis, the shell is split into a series of ring belts, the surface load is expanded in a Fourier series in the circular variable and is applied to the boundary of the belts. Numeric integration starts from the extreme parallel. The designs of

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ACC NR: AR6033807

truncated spherical and parabolic domes are given. P. M. Varvak. [Translation of abstract]

SUB CODE: 20/

Card 2/2

MADZHIRSKI, V.; CHICHOV, E.

Boundaries of the initial and transient parts at the mixing of two currents in a cylindrical tube. Godishnik mash elekt 10 no.3:65-74 '61 (publ.'62).

1040. ISOLATION OF BACILLI IN 'CLOSED' FORMS OF PULMONARY TB, DETERMINED BY THE METHOD OF MICROCULTURE AND INOCULATION OF GUINEA-PIGS (Russian text) - Chichkov M.S. - PROBL. TUBERK. 1957, 4 (69-72)

An investigation on 153 patients with so-called closed forms of tb. During the bacterioscopic examination of sputum, lavage waters of bronchi and pleural exudate, tb bacilli were found in only 5 patients. By means of culture and inoculation of guinea-pigs tb bacilli were found in an average of 31.7% of the patients. Thus, the division of patients into closed and open forms only on the basis of the bacterioscopic examination is relative. In sensitivity the biological method (guinea-pigs) approximates to the bacteriological culture; the latter is, however, more readily available and quicker. By examination of the lavage waters from bronchi for tb bacilli, positive results are obtained more frequently than by examination of sputum. (S)

KUZNETSOVA, Anastasiya Aleksandrovna; GOGOLIN, A.A., nauchnyy red.; CHICHKOV, N.V., red.; BABICHEVA, V.V., tekhn. red.

[Water-cooling system for small refrigerating plants; scientific report] Gradirnaia dlia malykh kholodil'nykh ustanovok; nauchnoe soobshchenie. Moskva, Gos. izd-vo torg. lit-ry, 1958. 7 p. (MIRA 14:7)

(Refrigeration and refrigerating machinery)

OLENEV, Yu.A.; CHICHKOV, N.V., red.; SOKOLOVA, N.N., tekhn.red.

[Technology of the cold treatment and storage of butter manufactured by the continuous method; a scientific report] Tekhnologiia kholodil'noi obrabotki i khraneniia slivochnogo masla, vyrabotannogo potochnym sposobom; nauchnoe soobshchenie. Moskva, Gos.izd-vo torg.lit-ry, 1959. 28 p. (MIRA 13:6)
(Butter)

AZOV, Grigoriy Moiseyevich; CHICHKOV, N.V., red.; BABICHEVA, V.V., tekhn.red.

[Reference tables for the manufacture of ice cream] Vspomogatel'nye raschetnye tablitsy v proizvodstve morozhenogo. Moskva, Gos.izd-vo torg.lit-ry, 1959. 163 p. (MIRA 13:6)
(Ice cream)

KOBULASHVILI, Sh.N., red.; CHICHKOV, N.V., red.; BABICHEVA, V.V., tekhn. red.

[Collection of Soviet reports at the Moscow Conference of the International Institute of Refrigeration] Sbornik dokladov ot SSSR na Moskovskoi konferentsii Mezhdunarodnogo instituta kholoda. Pod red. Sh.N.Kobulashvili. Moskva, Gos.izd-vo torg. lit-ry, 1959. 214 p. (MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kholodil'noy promyshlennosti im. A.I.Mikoyana (for Kobulashvili)
(Refrigeration and refrigerating machinery--Congresses)

TEZIKOV, Aleksandr Dmitriyevich; CHICHKOV, N.V., red.; BAEICHEVA, V.V., tekhn.red.

[Production and uses of dry ice] Proizvodstvo i primenenie sukhogo l'da. Izd.2., perer. i dop. Moskva, Gos.izd-vo torg. lit-ry, 1960. 126 p. (MIRA 13:9)
(Dry ice)

CHUPAKHIN, Nikolay Mikhaylovich, inzh.; RUDOMETKIN, Fedor Ivanovich, inzh.; BONDARENKOV, K.A., spets.red.; CHICHKOV, N.V., red.; MASLOVA, Ye.F., red.; SUDAK, D.M., tekhn.red.

[Assemblage, maintenance, and repair of refrigerating machinery] Montazh i remont kholodil'nykh ustanovok. Moskva, Gos.izd-vo torg.lit-ry, 1960. 328 p. (MIRA 13:5)
(Refrigeration and refrigerating machinery)

IL'IN, Yevgeniy Vasil'yevich; MAL'GINA, Yevgeniya Viktorovna; CHICHKOV, M.V., red.; SUDAK, D.M., tekhn.red.; BABICHEVA, V.V., tekhn.red.

[Refrigerating machines and cold storage] Kholodil'nye mashiny i ustanovki. Moskva, Gos.izd-vo torg.lit-ry, 1960. 400 p. (MIRA 13:5)

(Refrigeration and refrigerating machinery)

MARTYNOV, Mikhail Stepanovich; NITOCHKIN, Aleksandr Yefimovich; GIMPELEVICH, Samuil L'vovich; CHICHKOV, N.V., red.; KISELEVA, A.A., tekhn.red.

[Refrigerated transportation] Kholodil'nyi transport. Moskva, Gos.izd-vo torg.lit-ry, 1960. 175 p. (MIRA 13:12)
(Refrigerator cars) (Refrigerator ships)
(Refrigerated motortrucks)

SHUMELISHSKIY, Mark Grigor'yevich; CHICHKOV, N.V., red.; EL'KINA, E.M., tekhn.red.

[Ejector-type refrigerating machinery] Ezhektornye kholodil'nye mashiny. Moskva, Gos.izd-vo torg.lit-ry, 1961. 158 p. (MIRA 14:4)

(Refrigeration and refrigerating machinery)

BOBKOV, Vsevolod Andreyevich, kand. tekhn. nauk; CHICHKOV, N.V., red.; IL'KINA, E.M., tekhn. red.

[Manufacture of ice and its uses] Proizvodstvo i primenenie vodnogo l'da. Moskva, Gos.izd-vo torg. lit-ry, 1961. 165 p. (MIRA 14:5)

(Ice--Manufacture)

PIROG, Petr Ivanovich; CHICHKOV, N.V., red.; BRODSKIY, M.P., tekhn. red.

[Thermal insulation of cold storage warehouses] Teploizoliatsiia kholodil'nikov. Moskva, Gos. izd-vo trog. lit-ry, 1961. 203 p. (MIRA 14:7)

(Cold storage warehouses) (Insulation (Heat))